

## Underground Storage Tanks

Iowa Department of Natural Resources

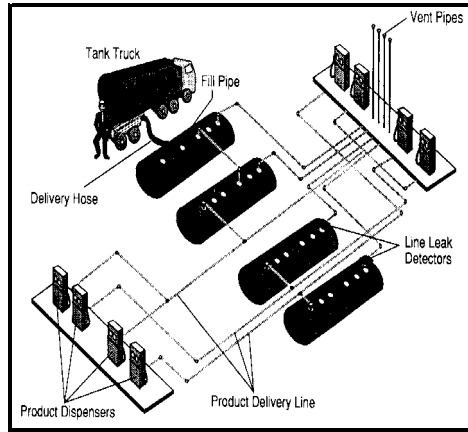
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This pamphlet gives a general overview of the requirements owners and operators of underground storage tanks must follow to comply with the Iowa and federal underground storage tank (UST) rules. Actual rules have been referenced for the complete detailed requirements to enable full compliance with the rules.

The Iowa Environmental Protection Commission adopted major revisions of the underground storage tank rules on October 17, 1988. The new rules became effective October 24, 1988 and incorporated technical standards of the federal underground storage tank rules.

The major differences from the federal rules are the notification and tagging requirements, and the regulation of farm and residential tanks of 1,100 gallons capacity or less.

The goals of the UST rules are to prevent, find and correct releases from USTs and the problems they create.



Major causes for UST releases are:

- 1) holes due to corrosion of unprotected steel tanks and piping.
- 2) improper installation using poorly selected and improperly compacted backfill, unapproved materials, or pipe fittings incorrectly attached.
- 3) spills and overfills when more product than the tank can hold is transferred or when the hose is improperly disconnected from the fill pipe.

The UST rules may be obtained by writing: Records, Iowa Department of Natural Resources, Wallace State Office Building, Des Moines, Iowa 50319 or telephoning (for copies **ONLY**) 515/242-5818.

## WHAT IS AN UNDERGROUND STORAGE TANK (UST)?

An UST is a tank and associated piping with 10% or more of its volume below ground and which stored or is storing a regulated substance.

A regulated substance is an element, compound or solution which, if released into the environment, may present danger

to the public health or welfare, or the environment and includes the following:

- 1) any petroleum or petroleum based substances (motor fuels, petroleum solvents, lubricants, used oil, etc.);
- 2) any substance that exhibits hazardous

characteristics defined in the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations or

- 3) any substance regulated under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

## CERTAIN UNDERGROUND STORAGE TANKS MAY BE EXEMPT IF:

- 1) they store heating oil for consumptive use on site where stored,
- 2) used as a septic tank,
- 3) used as a flow through process tank,
- 4) located in an underground area (i.e., a basement) and upon or above the floor,
- 5) they contain a regulated substance for operational purposes of equipment or machinery such as hydraulic lifts.
- 6) they contain 110 gallons or less.
- 7) they hold waste defined as hazardous by RCRA hazardous waste regulations.
- 8) used as emergency spill or overfill containment and emptied immediately after use.
- 9) part of a pipeline facility regulated under the Natural Gas Pipeline Safety or Hazardous Liquid Pipeline Safety Acts,

- 10) used as part of a wastewater treatment system regulated under the federal Clean Water Act, Section 402 or 307(b).

- 11) used only for farm or residential purposes, less than or equal to 1,100 gallons and installed prior to July 1, 1987. Must have notified DNR before July 1, 1989. **Farm and residential USTs installed after June 30, 1987 are subject to all fees and requirements, but do not have to show financial responsibility.**

## WHICH UNDERGROUND STORAGE TANKS ARE DEFERRED FROM PARTS OF THE RULES?

Some USTs are deferred from needing to comply with parts of the regulations at this time. USTs that store diesel fuel solely for use by emergency power generators are deferred from leak detection requirements. The following USTs only need to comply with rules 135.7 through 135.14 on release response and correction action: 1) wastewater treatment tanks systems; 2) UST systems containing radioactive material regulated under the Atomic Energy Act; 3) UST systems that are part of emergency generator facilities regulated by the Nuclear Regulatory Agency; 4) airport hydrant fuel distribution systems.

# TANK NOTIFICATION REQUIREMENTS

## REGISTRATION

Owners and operators of existing regulated UST systems were required to complete and submit to the DNR registration form 148 by May 6, 1986. Regulated USTs include tanks taken out of operation after January 1, 1974 unless the owner knows the tank was removed from the ground prior to July 1, 1985. [Rule 135.3(3)].

For all new tank installations, (after December 22, 1988) the registration form must include the signature of the installer certifying the installation was completed in accordance with the rules, specifically rule 135.3(1)"d". Copies of form 148 are available by telephoning the DNR Records Center at 515/242-5818.

The registration fee is \$10 per tank except for farm and residential tanks less than or equal to 1,100 gallons installed prior to July 1, 1987. These tanks must be registered, but do not require a fee and are exempt from other UST rules. **Existing petroleum USTs not registered by October 1, 1989 may be subject to a minimum statutory penalty of \$7,500.**

## REGISTRATION TAGS

Underground storage tanks registered with the DNR are issued tags that must be affixed to the fill pipe of the tanks [Rule 135.3(5)]. Tanks of 1,100 gallons or more must have an annual tag attached to the fill pipe by April 1 of each year. Tanks less than 1,100 gallons in capacity must attach the permanent tag that is received upon registration to the fill pipe.

Owners of tanks of over 1,100 gallons capacity must also submit a tank management fee of \$65 per tank upon initial registration of the tank and by January 15 of each year thereafter before new annual registration tags will be issued. Tanks less than 1,100 gallons are exempt from the \$65 management fee and receive a permanent registration tag.

**Persons who deliver regulated substances may deposit the substance in a tank which does not have a DNR tag on the fill pipe only one time. The delivery person must, at the time of the deposit, report the unregistered tank to the DNR and provide the owner or operator of the tank with a DNR tank registration form. No further deliveries may be made until the tank is registered and tagged. [Rule 135.3(3)]**

## CERTIFICATION OF TANK & PIPING INSTALLATION

Field-installed cathodic protection systems required for steel tanks and steel pipes or metal connectors on fiberglass tanks or pipes must be designed by a corrosion expert [subrule 135.3(1)"a" & "b"]. The corrosion expert must be accredited or certified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried metal systems and metal tanks.

**New tank and pipe installations must use certification, testing, or inspection methods currently available [subrule 135.3(1)"e" & 135.3(3)"e"]. For New Installations, You must choose one of the following:**

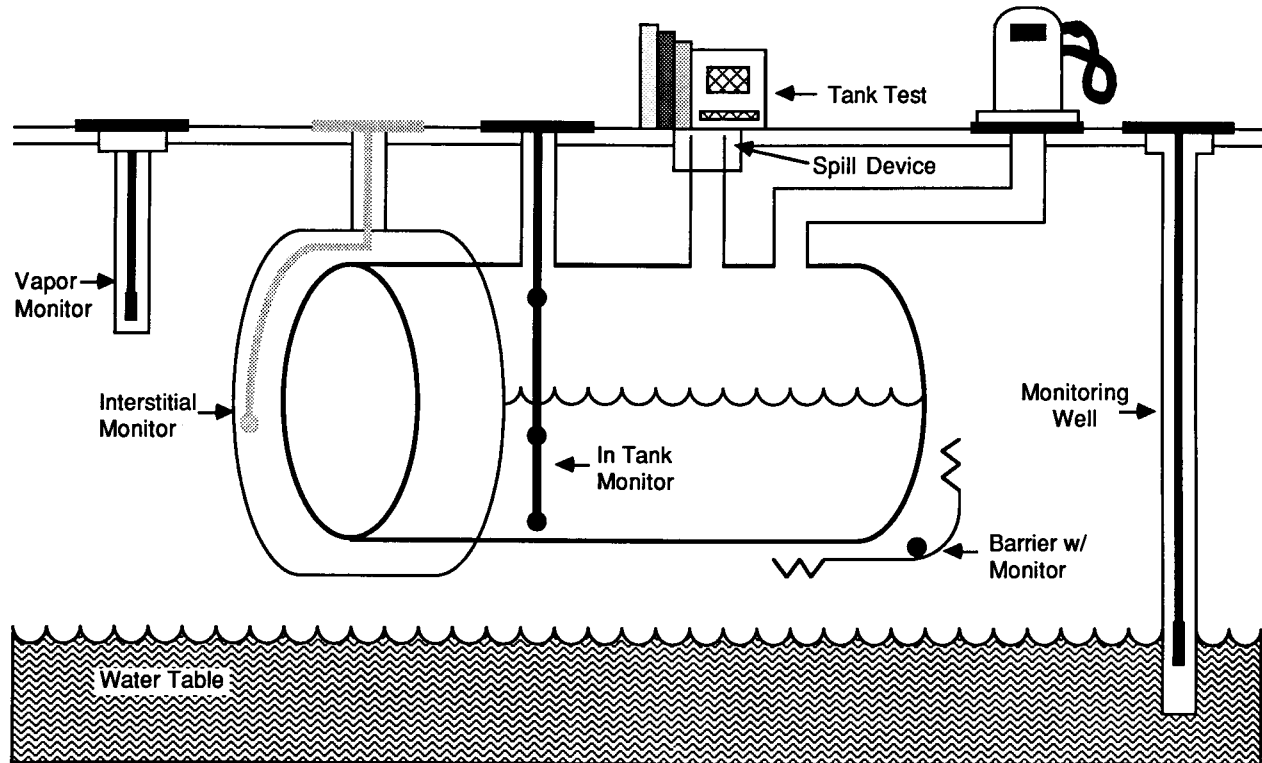
- ◆ Installer must be certified by the tank and piping manufacturer; or
- ◆ Installation must be inspected and certified by a registered professional engineer with education and experience in underground storage tank installation; or
- ◆ Installer must be certified or licensed by the Iowa Petroleum Underground Storage Tank Fund Board; or
- ◆ Installation has been inspected and approved by an inspector certified or licensed by the Iowa Petroleum Underground Storage Tank Fund Board; or
- ◆ All work listed in the manufacturer's installation checklist must be completed.

The registration form #148 (Form Number 542-3266) **must include** the signature of the installer, certifying that installation was completed in accordance with rules, specifically subsections 135.4, 135.3(1)"d" and 135.5.

## COMPLIANCE DATES

Type of Tank & Piping	Leak Detection	Corrosion Protection	Spill & Overfill Prevention
Tanks and Piping Installed after December 22, 1988	At Installation	At installation	At Installation
Tanks installed BEFORE December 23, 1988			
Before 1965	December 22, 1989	December 1998	December 1998
1965 - 1969	December 22, 1990	December 1998	December 1998
1970 - 1974	December 22, 1991	December 1998	December 1998
1975 - 1979	December 22, 1992	December 1998	December 1998
1980 - 1988	December 22, 1993	December 1998	December 1998
Piping installed BEFORE December 22, 1988			
Pressurized	December 1990	December 1998	Does Not Apply
Suction	Same Schedule as tanks	December 1998	Does Not Apply

## LEAK DETECTION [Rule 135.5]



### NEW TANKS:

- ◆ Monthly Monitoring\* OR
- ◆ Monthly Inventory Control and Tank Tightness Testing Every 5 Years. This choice may be used for only 10 years after installation.

### EXISTING TANKS:

- ◆ Monthly Monitoring\* OR
- ◆ Monthly Inventory Control and Annual Tank Tightness Testing. This choice may only be used until December 1998, OR
- ◆ Monthly Inventory Control and Tank Tightness Testing Every 5 Years. This choice may only be used for 10 years after adding corrosion protection and spill/overflow prevention or until December 1998, whichever date is later.

### PRESSURIZED PIPING:

(Requires one from each option)

#### Option 1

- ◆ Automatic Flow Restrictor
- ◆ Automatic Shutoff Device
- ◆ Continuous Alarm System

#### Option 2

- ◆ Annual Line Testing
- ◆ Monthly Monitoring\* (except some automatic tank gauging systems)

### SUCTION PIPING:

- ◆ Monthly Monitoring\* (except some automatic tank gauging systems), OR
- ◆ Line Testing Every 3 Years, OR
- ◆ There are no requirements if using safe suction piping:
  - check valve only at the pump, **and**
  - piping sloped to tank, **and**
  - suction pump operates at less than atmospheric pressure.

\*Monthly Monitoring Includes: Automatic Tank Gauging, Vapor Monitoring, Interstitial Monitoring, Groundwater Monitoring, Statistical Inventory Reconciliation (SIR). Or Other Approved Methods

## **CORROSION PROTECTION [Rule 135.3]**

### **NEW TANKS:**

- ◆ Coated and Cathodically Protected Steel, OR
- ◆ Fiberglass, OR
- ◆ Steel Tank clad with Fiberglass

### **EXISTING TANKS:**

- ◆ Same Choices as for New Tanks, OR
- ◆ Add Cathodic Protection System, OR
- ◆ Install Interior Lining, OR
- ◆ Install Interior Lining and Cathodic Protection

### **NEW PIPING:**

- ◆ Coated and Cathodically Protected Steel OR
- ◆ Fiberglass OR
- ◆ Other approved material

### **EXISTING PIPING:**

- ◆ Same Options as for New Piping OR
- ◆ Cathodically Protected Steel

## **SPILL/OVERFILL PROTECTION [Rule 135.3]**

### **ALL TANKS:**

- ◆ Automatic Shutoff Devices with Catchment Basin, OR
- ◆ Overfill Alarms with Catchment Basin, OR
- ◆ Ball Float Valves with Catchment Basin

## **RECORD KEEPING [Rule 135.4(5)]**

The following records must be kept at a readily available place so they can be provided to the DNR inspector during on-site visits

### **RELEASE DETECTION PERFORMANCE AND UPKEEP:**

- ◆ Any sampling, testing, or monitoring results must be kept at least one year.
- ◆ Results of the last tank tightness test;
- ◆ Copies of written performance claims, schedules of required calibration and maintenance provided by the leak detection manufacturer must be kept at least five years from date of installation;
- ◆ Maintenance, repair or calibration records of leak detection equipment must be kept at least one year after the service work is completed.

### **CORROSION PROTECTION:**

- ◆ Results of last two inspections of the corrosion protection system by a qualified cathodic protection tester (last three inspections, if an impressed current system).

### **REPAIRS OR UPGRADING:**

- ◆ Records documenting any repairs or upgrading of the UST system must be kept for the life of the UST system.

### **CLOSURE:**

- ◆ Records of the site assessment results required for permanent closure must be kept for at least three years after closure.

## TEMPORARY CLOSURE, PERMANENT CLOSURE, & CHANGE IN SERVICE

The DNR must be notified at least 30 days before beginning temporary/permanent closure or a change-in-service from a regulated to a nonregulated substance of an underground storage tank system. Notification is to be made on DNR form number 542-1308. Permanent closure can be accomplished by removing the tank system or filling the tank in place with an inert solid material. A site assessment must be completed to determine if environmental contamination has occurred for a permanent closure or change-in-service. For filling the tank in place, the site assessment must be done after the tank has been emptied or a Change-in-Service has been completed and prior to filling the tank with the inert material. Guidance documents are available from the DNR on acceptable closure procedures and performing the site assessment.

### TEMPORARY CLOSURE [RULE 135.15(1)]:

This Option of putting a tank out-of-service can only be used for up to 12 months at which time the tank must be brought into compliance or permanently closed.

- ◆ Operation and maintenance of corrosion protection and release detection systems must be continued. Release detection is not required if the tank is empty.
- ◆ After 3 months, vent lines must remain open and functioning. All other lines, pumps, manways, and ancillary equipment must be capped and sealed.
- ◆ At the end of 12 months the tank system must be permanently closed if it does not meet the new tank performance standards [subrule 135.3(1)] or the upgrading requirements [subrule 135.3(2)] except for the spill and overfill equipment requirements.
- ◆ Extensions of the 12 month period may be granted by the DNR, after a site assessment for contamination [subrule 135.15(3)] has been completed.

### PERMANENT CLOSURE & CHANGE IN SERVICE PROCEDURES [RULE 135.15(2)]:

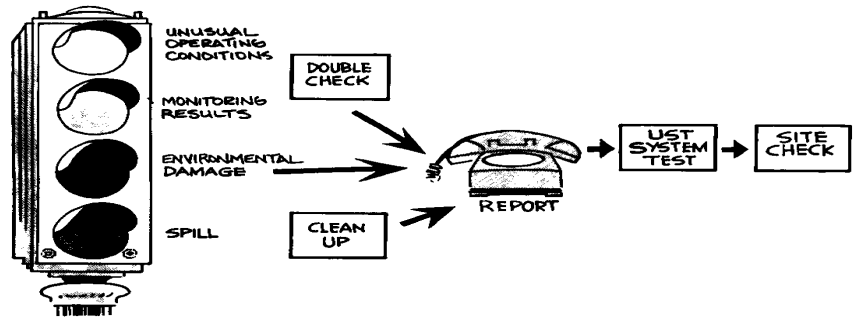
- ◆ 30 day prior notice to DNR before starting closure or change in service on DNR form 542-1308. DNR guidelines will be provided to you upon receipt of notice. Copies of the guidelines are available at any time by contacting the DNR.
- ◆ 24 hour oral confirmation to DNR Field Office of actual closure date prior to starting closure procedures
- ◆ Empty and clean tanks by removing all liquids and sludge.
- ◆ Drain all lines.
- ◆ Perform a site assessment for the presence of contamination according to DNR guidance documents. Other assessment methods should be submitted to the DNR for approval. In selecting sample types, locations and measurement methods, consideration must be given to the method of closure, the nature of the stored substance, the type of backfill and depth of backfill. If release detection facilities for vapor or groundwater monitoring are in place and operating according to DNR requirements and at least 90 days of monitoring records prior to the date of notification are available, they may be used for the site assessment.
- ◆ Submit to the DNR a report on the method of site assessment, a site plan indicating the location of the tank, depth to bottom of tank, sampling locations, sampling depth, all analytical results, soil types encountered, depth of groundwater, depth of excavation, type of substance last stored, disposition of the tank and contents, boring logs and the registration tags. For permanent closure, photographs of the tank and open excavation are recommended.
- ◆ If contaminated soil, contaminated groundwater or free product as a liquid or vapor is discovered, the DNR must be notified within 24 hours and corrective action begun. If a hazardous condition exists, the DNR must be notified within 6 hours.

### TANK DISPOSAL OPTIONS:

- ◆ Reuse the tank in an approved manner (cannot be reused as a regulated UST),
- ◆ Dispose at a salvage operation, or
- ◆ Dispose under a special waste authorization from the DNR at a permitted sanitary landfill.

# RELEASE REPORTING, INVESTIGATION, RESPONSE, & CORRECTIVE ACTION

Owners and operators of petroleum or hazardous substance USTs must report, investigate, and respond to all suspected or actual releases. The following sections outline actions that must be followed unless the DNR directs otherwise. The DNR may require additional information and submittal of a Site Cleanup Report (SCR).



## ACTUAL OR SUSPECTED RELEASES

[RULE 135.6 & 135.7]:

Spills/overfills of petroleum product of less than 25 gallons, and of hazardous substances less than the reportable quantity, do not have to be reported if cleaned up within 24 hours and no hazardous condition exists.

Call 281-8693 within 24 hours or 281-8694 within 6 hours if a hazardous condition exists.

In the case of an actual release, perform the following initial abatement steps:

- 1) Remove as much regulated substance as necessary from the tank system to prevent further release.
- 2) Visually inspect any above ground or exposed below ground releases and prevent further migration.
- 3) Monitor and mitigate any safety hazards.
- 4) Remedy hazards posed by contaminated soils excavated or exposed.
- 5) Measure for presence of a release where contamination is most likely to occur.
- 6) Determine the possible presence of free product and begin free product removal.

## INVESTIGATION OF SUSPECTED RELEASE WITHIN 7 DAYS

[SUBRULE 135.6(3)]:

Investigate and confirm all suspected releases by system tightness testing or site check or both to identify the presence and source of the release. A site check for the presence of contamination is required when environmental contamination is the reason for suspicion. A site check includes the sampling and analysis of soil and groundwater at the site to confirm a release using tank closure in place procedures provided in 135.13(3) or by conducting a Tier 1 assessment in accordance with 135.9(3) using a groundwater professional certified by the Iowa DNR under Chapter 134.

## INITIAL WRITTEN REPORT WITHIN 20 DAYS AFTER RELEASE CONFIRMATION

[SUBRULE 135.7(3)]:

Submit a written report to the DNR within 20 days after the release summarizing the required initial abatement steps taken and any data or information collected.

- ◆ Data on the nature and estimated quantity of the release;
- ◆ Results of site check for contamination
- ◆ Results of free product investigations.

## RISK BASED CORRECTIVE ACTION (RBCA)

[SUBRULES 135.8, 9, 10, 11 & 12]:

If contamination impacts soil or groundwater above the department's action levels, the petroleum contamination must be evaluated using "Risk Based Corrective Action" (RBCA) as described in subrule 135.8. Corrective action is based on the risks posed to human health, safety, and the environment focusing on individual exposure pathways by which contamination may reach actual and potential receptors. The RBCA investigation must be conducted by a groundwater professional certified by the Iowa DNR under Chapter 134.

## WHAT ABOUT ABOVE GROUND PETROLEUM STORAGE TANKS (ASTs)?

An above ground storage tank (AST) is defined as a horizontal or vertical tank that is approved or listed by NSF, Underwriter's Laboratory, etc., and is intended for fixed installation without backfill, above grade, and is used within the scope of its approval or listing. Once 10% of a tank and/or its associated piping is located below grade or is backfilled over with soils or material, even if the tank is located at or above grade, it is classified as an UST.

ASTs must be registered with the Division of the State Fire Marshall, Iowa Department of Public Safety, Wallace State Office Building, Des Moines, Iowa 50319-0034. The State Fire Marshall's office can be reached by calling 515/281-5821.

ASTs must meet requirements of Chapter 661-5 of the Iowa Administrative Code (IAC) and Rules 30 and 30A of the National Fire Protection Association (NFPA). NFPA publications may be obtained from local fire marshals or by

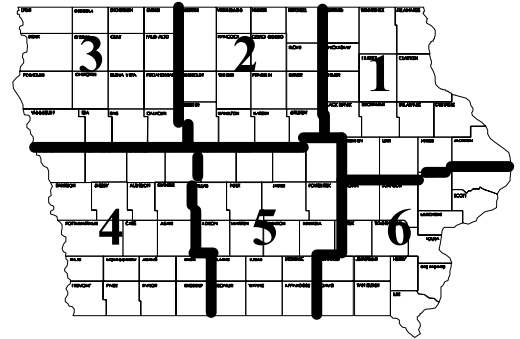
writing to NFPA, P.O. Box 9101, Quincy MA 02269-9101. Contact the State Fire Marshall concerning design and installation requirements.

ASTs and associated piping installation and corrosion protection must be approved by local authorities ( local fire marshall, zoning administrator, etc.) and comply with chapters 2 and 3 of NFPA 30, "Flammable and Combustible Liquids Code." Only tanks designed for use above ground may be used for above ground storage. Tanks designed for underground storage cannot be used for above ground storage due to inherent design and structural deficiencies.

Spill control must be provided to ensure any accidental discharge of any Class I, II or IIA liquid is prevented from endangering facilities, adjoining properties, or reaching water ways.

## DNR FIELD OFFICE LOCATIONS & ADDRESSES

Field Office 1 - 817 W. Fayette St.,Manchester, 52057	319/927-2640
Field Office 2 - 2300-15th St. SW, Box 1443, Mason City, 50401	515/424-4073
Field Office 3 - 1900 N. Grand, Box 4086, Spencer, 51301	712/262-4177
Field Office 4 - 706 Sunnyside, Atlantic, 50022	712/243-1934
Field Office 5 - 607 East Second, Des Moines, 50309	515/281-9096
Field Office 6 - 1004 W. Madison, Washington, 52353	319/653-2135



## CHAPTER 136 FINANCIAL RESPONSIBILITY FOR USTs

If you own or operate a regulated underground storage tank containing petroleum products, you must ensure, through insurance or other means, that there will be money to pay for the costs of third party liability and required corrective action due to a leak from your tank or piping. Tank systems that have been excluded or deferred under rule 135.1(3)"b" and "c" (see page 1) or that are not defined as an underground storage tank in rule 135.2 (See "What tanks are exempted") are not required to have financial responsibility.

If your UST leaks, you may be faced with high cleanup costs or lawsuits brought by third parties including: cleaning up leaked petroleum, correcting environmental damage, supplying drinking water, and compensating people for personal injury or property damage. Having financial responsibility means that money will be available to meet these costs. Financial responsibility protects you.

### WHO IS AFFECTED [RULE 136.1] ?

- ◆ Either the owner or the operator of the tank system must show financial responsibility, but not both if the owner and operator are different individuals or firms. It is the responsibility of the owner and operator to decide which of them will show financial responsibility. Both parties are liable in the event of noncompliance.
- ◆ Federal and state governments and their agencies that own USTs are not required to document financial responsibility. Local governments, however, must show financial responsibility.
- ◆ If you owned or operated a tank that was properly closed before the applicable compliance date, the financial responsibility requirements do not apply to that system.

## HOW MUCH FINANCIAL COVERAGE MUST YOU HAVE [RULE 136.4] ?

<u>Who</u>	<u>Throughput of the facility</u>	<u>Coverage/Occurrence</u>	<u>Aggregate Coverage</u>
Petroleum Marketer (sells to others for their use)	N/A	\$1 million	\$1 million if 100 or fewer tanks  - or -  \$2 Million if more than 100 tanks
Petroleum Non-marketer (buys & stores for their own use)	10,000 or less gallons/month	\$500,000	
	Above 10,000 gallons/month	\$1 Million	

### WHEN MUST YOU HAVE COVERAGE [RULE 136.2]?

- ◆ All regulated petroleum USTs had to have financial coverage by December 31, 1993
- ◆ Local governments and their agencies had to show financial coverage for their USTs by February 18, 1994

### HOW CAN YOU SHOW FINANCIAL RESPONSIBILITY [RULE 136.5]?

- ◆ A tangible net worth of \$10 million and the ability to pass one of the financial tests in 40 CFR 280.96 (rule 136.6)
  - ◆ Insurance coverage - Private Carrier (rule 136.8)
  - ◆ Insurance coverage - State Insurance Fund (136.8)
  - ◆ Guarantee from a corporate parent or other firm able to pass the net worth financial test (136.7)
  - ◆ Surety bond rule (136.9)
  - ◆ Letter of credit (rule 136.10)
  - ◆ Trust Fund (rule 136.11)
  - ◆ A combination of the above methods
- For local governments and their agencies, the following may also be used:**
- ◆ Local government bond rating test (136.13)
  - ◆ Local government financial test (136.14)
  - ◆ Local government guarantee (136.15)
  - ◆ Local government fund (136.16)

### WHAT RECORDS MUST YOU KEEP?

Records of the type of coverage you have must be kept at the tank site or your place of business. **You must maintain a certification of financial responsibility until the tanks are properly closed, or if corrective action is required, until corrective action has been completed.** If your method of financial responsibility is canceled, you must replace it within 60 days of cancellation. The DNR must be notified if another mechanism is not obtained within the 60 days.



